



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	Past Due
P0038929	MEC002-VU	2	1	Net 30	M17-4-H1150-R4.000	17-4 SS H1150 Round Bar 4.000" : MATERIAL: 17-4 PH CONDITION H1150 receive ft				6	2/26/2018	6		S042021	Stock	2/13/2018	\$ 145.75 / ft	0	
		10			M7075T6S4.600X5.000	7075-T6S Sheet 4.500" Thick X 5.000" Wide : MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft						9		S042022	Stock	2/13/2018	\$ 182.19 / ft	0	
Total:										12		15							

Plex 2/13/2018 3:19 PM Dart.Dubois.Pascal



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE


Page 1 of 1

Shipment No: 3510196

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA
Date Shipped 12-FEB-18	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier MANITOU LIN	BOL No 3510196-2

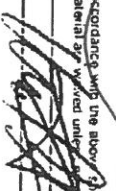
Shipment Details

Final Destination Branch - TOR

Order No 5033885	Line No 1	Item No 39902.MO	Description 4.0000.RD.17CR-4NI.STAINLESS.CF.H1150.132.0000-156.0000 CUT TO 72 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643 Email P/s and certs to: clavoie@dartaero.com			
Purchase Order No 38929	Part Number	Ordered Qty 1.00 PCS	Invoice Qty 6.0000 FT			
Details ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS						
Delivery No. 121600080	Mill/Source VALBRUNA CORPORATION	Heat/Number  267000	Mech Id 1	PCS	Width (IN)	
					Length (IN)	
					Shipped Qty(LBS) 256.0164	

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A. M. Castle & Co within 60 days of the shipment. Material cut to the correct size, or material found to be defective cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:



Date: FEB 12 2018 Name:

Date Printed: 12-FEB-2018 03:12:19 PM



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE


Page 1 of 1

Shipment No: 3510196

24038623

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 12-FEB-18	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOU LIN		BOL No 3510196-2	

Shipment Details Final Destination Branch - TOR

Order No 5033858	Line No 1	Item No 12999.MO	Description 4.5000.PL.7075.T651.ALUMINUM. 48.5" X 5" CUT RECTANGLE TO 48.5 IN () X 5 IN () SPECIFICATIONS: AMS-QQ-A-250/12 Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No 38929		Part Number		Ordered Qty 2.00 PCS	Invoice Qty 2.00 PCS		
Details ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS							
Delivery No. 121624210	Mill/Source	Heat Number  3 4 8 7 2 8 0	Mech Id 2	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS) 225.5235

We hereby certify the material covered by this certification conforms in accordance with the above specification and has been found to meet the applicable requirements for the material, including any special conditions. This report is on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 90 days of the shipment. Material not to the correct size, or not meeting the customer's requirements, must be returned for credit.

Reviewed by Authorized Castle Metals Representative: 

DATE: FEB 11 2018

Date Printed: 12-FEB-2018 03:12:19 PM



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038929

Supplier: MEC002-VU
Metaux Castle
P.O. Box 4090 Stn A
Toronto
ON
M5W OE9 Canada

PO No: PO038929

PO Date: 2/1/18

Due Date: 2/26/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Phone:

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
FEB 02 2018

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M7075T73B4.000x4.000		7075-T73 Bar 4.0 X 4.0 Grain Direction Along 4" Wide : MATERIAL: 7075-T73 OR 7075- T7351/T73510/T73511 BAR PER AMS-QQ-A- 200/11 OR AMS-QQ-A- 225/9 OR AMS 4124 OR AMS-QQ-A-250/12 OR AMS 4078 receive ft	Firmed	2/26/18	48 ft	0 ft	48 ft	\$107.58333/ft	\$5,164.00
Line Item Note 12 PCS CUT AT 4 FT LONG										
2	M17-4-H1150-R4.000		17-4 SS H1150 Round Bar 4.000" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	2/26/18	6 ft	0 ft	6 ft	\$145.75/ft	\$874.50
3	M7075T6S1.000X5.000		7075-T6 Sheet 1" Thick Plate X 5" Wide : MATERIAL: 7075- T6/T62 ALUMINUM SHEET AS PER QQ-A- 250/12 OR AMS-QQ-A- 250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$21.75/ft	\$261.00
4	M7075T6S1.250X2.750		M7075T6S1.250" X2.750" Cut From Plate : MATERIAL: 7075- T6/T62 ALUMINUM SHEET AS PER QQ-A- 250/12 OR AMS-QQ-A- 250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$34.30/ft	\$411.60

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
5	M7075T6S6.000X0.250		7075-T6S Sheet 6" Thick Plate X 0.25" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	36 ft	0 ft	36 ft	\$20.75/ft	\$747.00
6	M7075T6S7.000X2.000		7075-T6S Sheet 7" Thick Plate X 2" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	48 ft	0 ft	48 ft	\$78.52/ft	\$3,768.96
7	M7075T6S0.375X6.000		7075-T6S Sheet .375" Thick Plate X 6" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$25.68/ft	\$308.16
8	M7075T6B1.000X00.250		7075-T6 Bar 1.000' X 0.250" : MATERIAL: 7075-T6 OR T651/T6510/T6511/T62 ALUMINUM BAR AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR PER AMS-QQ-A-200/11 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$9.92/ft	\$119.04
9	M7075T6S2.000X0.750		7075-T6S Sheet 2" Thick Plate X 0.75" Wide : MAT'L 7075-T6/T62 ALUMINUM SHEET SPECS QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR PER ASTM B209 MAT'L 7075-T6/T62 ALCLAD ALUMINUM SHEET SPECS QQ-A-250/13 OR AMS-QQ-A-250/13 OR AMS 4049 OR PER ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$18.47/ft	\$221.64

Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
10	M7075T6S4.500X5.000		7075-T6S Sheet 4.500" Thick X 5.000" Wide : MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	6.125 ft	0 ft <i>9ft 48.5 inch x 2</i>	6 ft	\$182.19/ft	\$1,115.91
11	M7075T6S1.000X2.500		7075-T6S Sheet 1" Thick Plate X 2.5" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$30.42/ft	\$365.04
12	M7075T6S1.250X2.000		7075-T6 Sheet 1.250" X 2.000" : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$20.12/ft	\$241.44
13	M7075T6S0.375X5.000		M7075T6S0.375 X 5.000 : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	2/26/18	12 ft	0 ft	12 ft	\$18.10/ft	\$217.20
Grand Total:										\$13,815.49

Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 2/1/18 10:20 AM dart.lacelle.linda

Chantal Lavoie

From: Desbiens, Marc <mdesbien@amcastle.com>
Sent: Monday, January 22, 2018 1:34 PM
To: Chantal Lavoie
Subject: RE: quote

Good Morning Chantal,

price an delivery on mat'l.

7075t73 bar 4" x 4" x 12 ft cut in section of 4 ft grain direction along 4" ✓

Offer plate \$ 1291.00 Lot 2-3 weeks

12 pcs. at 4 ft

17-4 h1150 round bar 4" x 6 ft ✓

\$ 145.75 FT 8-9 days

Bar or sheet acceptable

7075t6 Sheet 1" x 5" x 12 ft \$ 21.75 Ft 2-3 weeks ✓

7075t6 sheet 1.250" x 2.750" x 12 ft \$ 34.30 Ft 2-3 weeks ✓

7075t6 sheet 6" x 0.250" x 36 ft \$ 20.75 Ft 2-3 weeks ✓

7075t6 sheet 7" x 2" x 48 ft \$ 78.52 Ft 2-3 weeks ✓

7075t6 sheet 0.375" x 6" x 12 ft \$ 25.68 Ft 2-3 weeks ✓

7075t6 sheet 1" x 0.250" x 12 ft (2 pcs 6ft) \$ 9.92 Ft 2-3 weeks ✓

7075t6 sheet 2" x 0.750" x 12 ft \$ 18.47 Ft 2-3 weeks ✓

7075t6 sheet 4.5" x 5" x 8 ft cut in section 4 ft 50.125" Long \$ 182.19 Ft 2-3 weeks ✓

7075t6 sheet 1" x 2.5" x 12 ft \$ 30.42 Ft 2-3 weeks ✓

7075t6 sheet 1.250" x 2" x 12 ft \$ 20.12 Ft 2-3 weeks ✓

7075t6 sheet 0.375" x 5" x 12 ft \$ 18.10 Ft 2-3 weeks ✓

~~303 bar 1" x 3" x 12 ft \$ 107.48 FT 2 weeks~~

~~304 bar 0.750" x 2.5" x 12 ft \$ 24.62 FT 8-9 days~~

~~304 bar 0.500" x 2.5" x 12 ft \$ 19.93 FT 8-9 days~~

~~Round bar bronze 2.375" x 1 ft (63000 spec's) Regret~~

D4970-041.

Thanks

Marc Desbiens
Inside sales representative
Castle Metals, Montreal, QC
Direct line 514-795-8176
1-800-806-6660 ext 52226
Fax # 1-855-892-6370

Customized Supply Chain Solutions for Your Metal Needs

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: 17075+654.500X5.000
DATE: FEB 13 2018

PO BATCH NO: 038929/504022

MATERIAL CERT REQ'D: YES
QUANTITY RECEIVED: 9"
QUANTITY INSPECTED: 9"
QUANTITY REJECTED: 0

THICKNESS ORDERED: 4.500
THICKNESS RECEIVED: 4.500
SHEET SIZE ORDERED: N/A
SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	(N)	Amis QD-A-250
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 23487280
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.
RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEAR
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION

ENGINEERING SIGNOFF (if req)

INSPECTED BY: 11
DATE: 9-89
FEB 13 2018

SIGNED OFF BY: _____
DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in.

SPECIFICATION CONTROL DRAWING

B PURCHASE MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET OR PLATE

SPECIFICATION:

QQ-A-250/12 OR AMS-QQ-A-250/12
OR AMS 4045
OR ASTM B209

OR

B PURCHASE MATERIAL: 7075-T6/T62/T651 ALCLAD ALUMINUM SHEET OR PLATE

SPECIFICATION:

QQ-A-250/13 OR AMS-QQ-A-250/13
OR AMS 4048 / 4049
OR ASTM B209

B PART NUMBER:

M7075T6S | TTT | X | W.WWW |
| THK | | WIDTH |

B WHERE "TTT" = THICKNESS (IN INCHES)

AND "W.WWW" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)

EG. 0.063" THICK SHEET = M7075T6S.063

EG. 3.5" WIDE BY 0.500" THICK PLATE = M7075T6S.500X3.500

B PREFERRED SIZE:

.TTT BY 4FT BY 10FT FOR SHEET

RELEASED

2017 JUN 19
ECN 17-574

APPROVED

B	ADD: REF TO "PLATE", "T651" TEMPER, AMS 4048, OPTIONAL WIDTH DIM (CAR16-149)	CP	17.05.05
A	NEW ISSUE	RF	10.11.08
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	CP		
CHECKED	ML		
MFG. APPR.	LL		
APPROVED	WM		
DE APPR.	D9		
DATE	17.05.05		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M7075T6S			
REV. B			
SHEET 1 OF 1			
TITLE 7075-T6 SHEET/PLATE SPEC			
SCALE NTS			
COPYRIGHT © 2005 DART AEROSPACE LTD. THIS DOCUMENT IS UNCLASSIFIED AND IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.			

SHIP TO:
HADCO METAL TRADING CO. LLC
SHIP TO STOCK
555 STATE ROAD
BENSALEM, PA 19020

SOLD TO:
HADCO METAL TRADING CO. LLC
555 STATE ROAD
BENSALEM, PA 19020

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4478405



CUSTOMER PO NUMBER: 098007-6	WORK PACKAGE:	CUSTOMER PART NUMBER:	SHIP UNLOAD: 1040416	GOVT CONTRACT NUMBER:
KAISER ORDER NO. 1242581-6	SHIP DATE: 18-SEP-2017	ALLOY: 7075	CLAD: BARE	TEMPER: T651
WEIGHT SHIPPED 6446 LB	QUANTITY 2 PCS EST.	TRUCK B/L #: 2069047	GUAGE 4.5000 IN (114.3000 MM)	PRODUCT DESCRIPTION: KaiserSelect Plate DIAMETER/WIDTH: 48.500 IN (1231.0 MM) LENGTH: 144.500 IN (3670.2 MM)

MHU 2151058 LOT 234872B0: 1 pieces;
MHU 2151059 LOT 234872B0: 1 pieces;

Certified Specifications

AMS 4045/Rev L

AMS-30-A-250 12/Rev A

ASTM B 209/Rev 14

Test Code: 1512
Lot: 234872B0

Cast 529

Drop 04

Test Results
Ingot 5

Melted in USA

(ASTM B9/B557)
(EN 2002-1)

Tensile:	Temper	Dir # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT + 2 (Min/Max)	69.3 : 70.0 (478 : 483)	54.7 : 55.7 (377 : 384)	10.5 : 10.8

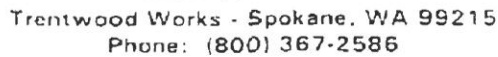
(ASTM E1251)

Chemistry	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.09	0.18	1.5	0.04	2.5	0.19	5.7	0.03	0.01	0.01	TOT 0.04

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.16	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder



Serial Number
4478405

[illegible]

JAMES HEMENWAY, TECHNICAL PROCESS MANAGER

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M17-4-H1150-R4.000

PO BATCH NO: 038929/5042021

DATE: FEB 13 2018

MATERIAL CERT REQD: yes
 QUANTITY RECEIVED: 6"
 QUANTITY INSPECTED: 6"
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 4.000
 THICKNESS RECEIVED: 4.000
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	<u>Ams 5643</u>
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	<u>Heat # 267800</u>
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.
 RECORD RESULTS BELOW

	HRC	HRB	DURA	DURE	WEAR
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if req)	
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 FEB 13 2018</u>	SIGNED OFF BY: _____ DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 17-4 PH / S17400 / TYPE 630 SS ROUND BAR
GRAIN MUST BE ALONG LENGTH OF BAR
MINIMUM YIELD STRENGTH PER TABLE
MINIMUM ULTIMATE STRENGTH PER TABLE

SPECIFICATION: AMS 5643 OR ASTM A564

PART NUMBER: M17-4-HHHH-R | X.XXX | WHERE: HHHH SPECIFIES THE MATERIAL CONDITION (PER TABLE BELOW)
COND | O.D. | X.XXX = DIAMETER (IN INCHES)

MATERIAL CONDITION TABLE:

CODE	CONDITION	MIN YIELD TENSILE STRENGTH (KSI)	MIN ULTIMATE TENSILE STRENGTH (KSI)
(OMITTED)	NONE SPECIFIED (CONDITION A NOT ACCEPTABLE)	100	150
H900	H900	170	190
H925	H925	155	170
H1025	H1025	145	155
H1075	H1075	125	145
H1100	H1100	115	140
H1150	H1150	105	135
CONDA	CONDITION A (SOLUTION TREATED)		

NOTES: MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR
TENSION OR SHEAR APPLICATIONS IN COLD WEATHER CONDITIONS
MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR
APPLICATIONS WHERE STRESS CORROSION CRACKING IS POSSIBLE
CONDITION A NOT TO BE USED IN DESIGN FOR FINAL PRODUCT AND
SHOULD ALWAYS BE HEAT TREATED

EXAMPLES:

PART NUMBER
4.000" DIAMETER BAR MIN UTS = 150 KSI, MIN YTS = 100 KSI
2.500" DIAMETER BAR H900 CONDITION
3.250" DIAMETER BAR H1025 CONDITION
0.750" DIAMETER BAR A CONDITION

RELEASED
2017-10-31
E(17-728)

APPROVED

C	ADDED MATERIAL CONDITION (CIR17-107)	NO	17.09.14
B	REFORMAT DWG. S17400 TYPE 630 ADDED TO REPAIR MATERIAL (ZIN D8-1), ADD A564 SPEC (C8-1).	VS	10.05.20
A	NEW ISSUE	CP	05.03.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
DE APPR.			
DATE	17.09.14		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M17-4-R			
SHEET 1 OF 1			
TITLE 17-4 SS ROUND BAR			
SCALE NTS			
DATE 17.09.14			
COPYRIGHT © 2005 BY DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT PERMISSION FROM DART AEROSPACE LTD			

**VALBRUNA**SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 630
PORT WAYNE IN 46081 USA
PHONE: 260 434 2800 - FAX 260 434 2801**Product Certification Report**Report Number: **5436080**

Certified on Jan 08, 2018 Page 1 of 2

Order I.D.	Order Date	Commodity Code			
1701428-001	6/27/17	39902			
Qty 1	Qty 2	Qty 3	Main I.D.	Customer I.D.	Customer Purchase Order
4.0000	.0000	.0000	267900	001117	430603
Product Shape	Product Surface				Customer Grade
Rounds	Centerless Ground/Cold Finish				17-4
Length (Inches)	Bit of Landing #		Weight		
132.000 Min. 156.000 Max.	431460				

Ship To
CASTLE METALS
 26800 MILES ROAD
 BEDFORD HEIGHTS, OH 44146

Sold To
VALBRUNA STAINLESS, INC.
 2400 TAYLOR STREET WEST
 PORT WAYNE, IN 46802

Lifts: 0064

AISI 630

UNS S17400

ASMESA 564-13

Condition H-1150

AMS 2303F

ASTMA 564-13 Type 630

3174-04 REV 41

AMS 5643U

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta
.038	.48	.023	.021	.44	15.73	4.40	.21	3.22	.031	.282	.0026
Cb+Ta											
.2846											

BRINELL Type A device E10-15a

HBW

512

ROOM TEMP TENSILE ASTM E8-16a

TS (PSI)	.2%YS (PSI)	%EL (4d)	%RA
141400	111600	20.4	58.4

CHARPY V NOTCH E23-16b 10x10mm

TEMP	FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	%SHR	%SHR	%SHR	AVG FT LB
70	90	92	86	61	55	56	70	70	70	89
AVG LAT EX		AVG % SHEAR								
57		70								

MAGNETIC PARTICLE to AMS2303F

FREQ SEV

AVG .00 .00

MACRO ASTM E340-15/E381-01(12)

MACRO

OK

OK

OK

PERCENT FERRITE (AMS 2315G)

% FERRITE Etchant Magnification X

AVG .4 Marbles 100

Solution heat treated at 1900 degrees F plus or minus 25 degrees. one hour minimum and air cooled.

Heat treated at 1150 degrees F for 4 hours and air cooled.

Reduction ratio 5 To 1 Min.

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info.

I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

Tad Landwehr

email TLandwehr@valbruna.us

Tad Landwehr



**VALBRUNA**SLATER STAINLESS, INC.
2400 TAYLOR STREET WEST - PO BOX 830
FORT WAYNE IN 46802 USA
PHONE 260-434-2800 • FAX 260-434-2801**Product Certification Report**Report Number: **5436080**

Certified on Jan 08, 2018 Page 2 of 2

Order I.D.	Order Date	Commodity Code	Dim 1	Dim 2	Dim 3	Heat I.D.	Customer I.D.	Customer Purchase Order
1701428 001	6/27/17	39902	4.0000	.0000	.0000	267900	001117	430603
Product Shape	Product Surface	Customer Grade						
Rounds	Centerless Ground/Cold Finish	17-4						
Length (Inches)	800 of Length #	Weight						
132.000 Min.	156.000 Max.	431460						

CASTLE METALS
26800 MILES ROAD
BEDFORD HEIGHTS, OH 44146

Ship To

VALBRUNA STAINLESS, INC.
2400 TAYLOR STREET WEST
FORT WAYNE, IN 46802

Sold To

Electric Furnace melted; AOD refined.

Chemical testing to one or more of the listed ASTM methods:

E1019-11, E1086-14.

Location of tensile fracture: inside middle of gage length. %elong after fracture.

Chemical Analysis performed at Acciaierie Valbruna, Italy.

No mercury or low melting alloy contamination. No weld repair.

Material melted in Italy, manufactured in the United States.

Material conforms to listed specifications. DFARS compliant. Our heat treat furnaces use air atmosphere.

Quality system is compliant with ISO 9001:2015. Produced in accordance with EN 10204 3.1.

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Manager Laboratory Services

email TLandwehr@valbruna.us

Tad Landwehr